REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1, 2, 5-7, and 9 are pending in this application. Claims 1, 2, and 7 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent 5,948,291 to Neylan et al. (herein "Neylan") in view of U.S. patent 6,373,026 to Kurosawa et al. (herein "Kurosawa"). Claims 5, 6, and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Neylan and Kurosawa and further in view of U.S. patent 6,649,964 to De Steur et al. (herein "De Steur"). Those rejections are traversed by the present response as discussed next.

Initially, applicants note each of independent claims 1, 2, and 7 is herein amended to clarify features recited therein. Those claims now particularly clarify the total reflection mirror is moved into and retract from the optical path "during an off-time of the laser beam" in the predetermined pulse of the laser oscillator. That is, according to the claims as currently written, and with reference to Figure 1 in the present specification as an non-limited example, a total reflection mirror 8 is moved into and retracted from the optical path at an off-time of the laser beam, i.e., when the laser beam is ***off***.

In further detail, Figure 1 in the present specification as a non-limiting example shows a laser beam is output from a laser oscillator onto a plurality of optical path systems 30, 40. A total reflection mirror 8 as an optical path switch can be placed into and retracted from an optical path to determine on which of the optical paths 30 or 40 the output laser beam propagates. Further, the total reflection mirror 8 is placed into or retracted from the optical path during an ***off-time*** of the laser beam. Applicants submit the above-noted features are neither taught nor suggested by the applied art.

With respect to the claimed features the outstanding rejection cites Kurosawa specifically stating:

> Kurosawa et al. discloses laser beam machining using a pulsed laser. The scanner drive/laser trigger apparatus outputs

> the trigger of the laser oscillation for the laser oscillator at a predetermined pulse frequency and drive commands for the two beam scanner apparatus. It is possible to position a spot of the laser beam at high speed at an optional drilling position on the printed board having many drilling positions in synchronization with a pulse frequency of the laser beam radiated from the laser oscillator. In addition a reflection mirror disposed in the optical axis of the laser beam is taught.
>
> It would have been obvious to one of ordinary skill in the art at the time of the invention to synchronize the pulses with the laser beam machining because it ensures optimal of the laser beam at all times.[1]

Applicants submit the above-noted grounds for rejection does not correspond to the currently claimed features. That is, Kurosawa does not disclose or suggest that any reflection mirror or similar device is moved into and retracted from an optical path during an ***off-time*** of a laser beam. Kurosawa in fact appears to disclose just the opposite as Kurosawa discloses that rotary choppers 39 will rotate while a laser beam is ***on***.

Applicants draw specific attention to Kurosawa at Figures 27-29, at which applicants submit Kurosawa discloses rotary choppers 39 mounted between a laser oscillator 32 and a reflection mirror 36 to rotate in synchronization with each other at the same speed to radiate pulse beams. That is, in Kurosawa each of the rotary choppers 39 chops the continuous laser beam to generate pulse beams. Applicants also draw specific attention to Kurosawa at column 23, line 46 et seq., at which point Kurosawa discloses the synchronization of the two rotary choppers 39 with each other and provided with a triggering operation to trigger the generation of a laser beam 27.

The claims as written recite a structure that differs from Kurosawa. In the claims as written a switch mirror is either inserted into or retracted from an optical path in synchronization at an off-time of a laser beam. That is, in the claims the movement of the switching mirror only takes place ***when the laser beam is off***. Kurosawa fails to teach or

[1] Office Action of December 29, 2008, page 3, second and third paragraphs.

suggest such a feature as Kurosawa discloses the rotary choppers 39 rotate while the laser beam ***is on***.

In maintaining the grounds for rejection, the outstanding Office Action now also cites Neylan at column 5, lines 53-65. At that portion Neylan specifically states:

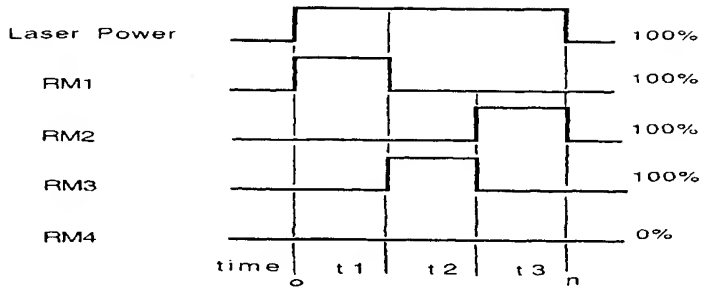
> The distribution configuration sown in FIG. 6a is a variation on the configuration shown in FIG. 5a. In this configuration full power is non-sequentially distributed from the reflector members for a sub-period of time needed to complete an individual work piece, thus non-sequentially switching full power output from reflector member to reflector member. The timing and order of the distribution is dependent on the work desired and is fully programmable by the user. For each time sub-period, t, the movable reflector members RM1-RM3 are positioned at either fully transmissive or fully reflective portions to give the desired beam distribution. FIG 6b shows the power/time diagram for this configuration.[2]

In reply to the above-noted grounds for rejection, applicants note Neylan discloses moveable reflector members RM1-RM3 are positioned at either a fully reflective portion or a fully reflective portion to give a desired beam distribution. Neylan, however, does not disclose or suggest that any of such reflector members RM1-RM3 would be moved into or retracted from such positions during an ***off-time*** of the laser beam.

The word "timing" noted above in Neylan does not at all indicate the noted reflector members RM1-RM3 are moved into and retracted from an optical path during an off-time of the laser beam. In fact, Figure 6B in Neylan reprinted below appears to contradict that interpretation in the applied art.

[2] Neylan at column 5, lines 53-65.

FIGURE 6b



The above reprinted Figure 6b in Neylan shows a laser power at different timings t0, t1, t2, t3 at which reflector members RM1-RM3 can apparently be moved. As clear from the above-noted Figure in Neylan at each time any of the reflector members RM1-RM3 is moved the ***laser power is at 100%***; that is, the laser power is completely ***on***. The claims recite a contrary operation as in the claims as written a reflector mirror is moved into or retracted from an optical path at an ***off-time*** of a laser beam. Figure 6b in Neylan reprinted above contradicts Neylan being applied for such as a feature as it clearly shows Neylan discloses a ***contrary operation than as claimed***.

In view of the foregoing comments, applicants respectfully submit that the claims as currently written clearly positively recite features neither taught nor suggested by Neylan in view of Kurosawa.

Moreover, no disclosers in De Steur were cited with respect to the above-noted features, and no disclosures in De Stuer are believed to cure the above-noted deficiencies of Neylan in view of Kurosawa.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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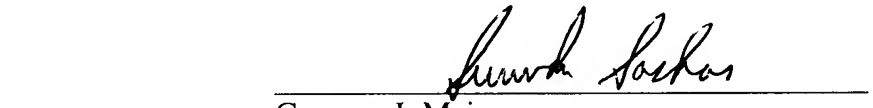
MAIER & NEUSTADT, P.C.



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